

(a) Moose Viewing. Consider establishing an enhanced moose winter range and wildlife viewing areas in the southwest portion of Subunit B. If this is not feasible or adequate, off-site locations may need to be considered, including the Matanuska Valley Moose Range.

(b) Salmon Viewing. There is potential for development of a salmon spawning viewing area near the mouth of Fishhook Creek.

(c) Landscape for Wildlife. When revegetating and landscaping, consider plant materials that will be beneficial to local wildlife species. Trees and shrubs should be planted in groves around base facilities and ponds to attract birds. Natural areas can be specifically designed to attract small mammals and birds. However, deciduous trees and shrubs known to be attractive to moose should be avoided as they will be browsed by moose and will attract moose which may create a public safety problem; this includes birch, aspen, poplar, and mountain ash.

(d) Visitor Information. Provide visitors with information on wildlife that occur in the area and guidelines for human compatibility with the wild animals.

(f) Fish and Wildlife Guidelines. Refer to other fish and wildlife habitat guidelines in chapter 3 and in this subunit.

(11) Public Information Station. The developer should consider inclusion of a contact station for DNR to provide information about public lands to visitors.

o. Helicopter operations

Helicopter operations are allowed within the four-season resort lease in Subunit B. In Subunit A, helicopter operations are allowed only for emergencies, construction, and maintenance. Before helicopter operations (other than those necessary for emergencies, construction, or maintenance), or a heliport that may be used for other types of operations will be approved in Subunit B, measures to address and minimize noise and other impacts must be developed. Examples of such measures are location, buffers, and limiting operations. The lessee must complete a helicopter operations plan that explains what measures will be taken to minimize these impacts. This helicopter operations plan must be approved by DNR before helicopter operations for commercial recreation purposes are allowed within the lower elevations of the lease.

5. ENGINEERING GEOLOGY

a. Slope Stability

(1.) Slope Stability Analysis. Perform a slope-stability analysis wherever permanent structures will be located on till slopes to ensure that the slope after construction will have a safety factor appropriate for the type of structure.

(2.) Diversion of Drainage. Install diversion ditches and interceptor drains to divert drainage around structures and away from disturbed surfaces and unstable slopes into existing channels; or use pilings driven to bedrock or into firm till to support permanent structures wherever possible to allow natural drainage to continue underneath structures and to alleviate some of the need for cut-and-fill.

(3.) Till Spoils. Refrain from placing permanent till spoil piles on slopes. Where used for fill or levelling, till spoils should be compacted and revegetated.

(4.) Cut Slope Stability. Excavate and maintain cut slopes in till consistent with sound engineering practice.

b. Block-Creep

(1) Building Restriction. Refrain from building permanent structures on debris slides or block-creep (sackung) failures to the extent possible.

(2.) Test Rates of Movement. Install survey stakes and/or slope-indicator tubes on one or two block-creep failures near proposed facilities to determine whether they are active and, if so, their rates of movement.

(3.) Monitoring. If ski-lift supports are installed in block-creep areas, they may be subject to gradual misalignment. Careful monitoring of their alignment and spacing would provide a good indication of any block movement.

c. Earthquakes and Faults

(1.) Earthquake Standards. Design and construction of all facilities in the area should conform to the earthquake provisions of the Uniform Building Code for seismic zone 4 as appropriate for the type of facility.

(2.) Earthquake Response Plan. An earthquake response plan shall be included in resort planning by the developer.

(3.) Dynamic Loading. Dynamic loading using design ground-motion parameters appropriate for the area should be incorporated into slope-stability analyses where permanent structures for human occupancy are proposed.

(4.) Smaller Fault Zones. In the event permanent structures are proposed on or near the smaller fault zones around Government Peak (**DGGS Public Data File Report 88-39**), field studies should be conducted to accurately map their locations and to determine the probable age of most recent activity.

d. Boulder Fields and Talus Slopes

(1.) Remove Large Boulders. All areas within and adjacent to ski runs should be examined carefully for large boulders which should be removed.

(2.) Rock Fall Deposits. If ski runs are extended north of Bald Mountain Ridge, the rock-fall deposit (see, Fig. 2, DGGs Public Data File Report 88-39) should be barricaded to prevent skiers from crossing it. Slopes in this area should also be examined for scattered erratic boulders which should be removed.

(3.) Talus Slopes. Facilities and roads should not be placed on talus slopes or near their bases (Fig. 3, DGGs Public Data File Report 88-39).

e. Pre-Construction Engineering

(1.) Specifications of Buildings. Building plans should include selective design to conform to expected natural conditions. Plans should also include foundation design which must allow for expected soil and drainage conditions.

(2.) Soils Engineering. Civil engineering, which must include soils engineering, slope-stability analysis, and drainage evaluation shall be conducted as part of the developer's pre-construction approval (in Subunit A, this requirement is subject to the terms of the existing lease). Because of a relatively short snow-free season, at least 18 months should be allowed for this work to accommodate two field seasons.

6. REVEGETATION AND EROSION CONTROL

a. Minimize vegetation removal. The removal of vegetation shall be kept to a minimum and areas requiring disturbance should be seeded or planted as soon as possible after disturbance. To the extent possible, stumps of trees and shrubs and the associated underlying vegetation along the ski courses should be left intact to enhance slope stability and erosion control. Small debris flows may be a persistent minor maintenance problem on the ski slopes.

b. Use Minimal Impact Construction Methods. Minimal impact construction, i.e., use of hand tools and ground crews, use of helicopters for setting lift towers in place, etc., should be practiced to the extent feasible to minimize impacts on vegetation and related erosion problems.

c. Leave Islands of Native Vegetation. Where possible, islands of native vegetation should be left undisturbed.

d. Snow Storage on Surfaced Areas. Snow piles should be placed away from streams and drainage corridors, on pavement (such as the corner of a parking lot), a gravel surface, or some other non-vegetated surface to minimize negative impacts to vegetation and prevent increased erosion. Damage to plants is caused by the